

Table 1

x	$5x+10$	First Factor	Second Factor	pattern
1	15	5	3	$5(1+2)$
2	20	5	4	$5(2+2)$
3	25	5	5	$5(3+2)$
4	30	5	6	$5(4+2)$
5	35	5	7	$5(5+2)$
n	$5n+10$	5	$n+2$	$5(n+2)$

Table 2

x	$x^2 + 2x$	First Factor	Second Factor	pattern
1	3	1	3	$1(1+2)$
2	8	2	4	$2(2+2)$
3	15	3	5	$3(3+2)$
4	24	4	6	$4(4+2)$
5	35	5	7	$5(5+2)$
n	$n^2 + 2n$	n	$n+2$	$n(n+2)$

Table 3a

x	$5x^2 + 10x$	First Factor	Second Factor	First Factor	Second Factor	pattern
1	15	5	3	1	3	$5(1)(1+2)$
2	40	5	8	2	4	$5(2)(2+2)$
3	75	5	15	3	5	$5(3)(3+2)$
4	120	5	24	4	6	$5(4)(4+2)$
5	175	5	35	5	7	$5(5)(5+2)$
n	$5n^2 + 10n$	5		n	$n+2$	$5n(n+2)$

Table 3b

x	$5x^2 + 10x$	First Factor	Second Factor	pattern
1	15	5	3	$5(1)(1+2)$
2	40	10	4	$5(2)(2+2)$
3	75	15	5	$5(3)(3+2)$
4	120	20	6	$5(4)(4+2)$
5	175	25	7	$5(5)(5+2)$
n	$5n^2 + 10n$	$5n$	$n+2$	$5n(n+2)$

Table 4

x	$x^2 - 49$	First factor	Second Factor	pattern
1	-48	-6	8	(1-7)(1+7)
2	-45	-5	9	(2-7)(2+7)
3	-40	-4	10	(3-7)(3+7)
4	-33	-3	11	(4-7)(4+7)
5	-24	-2	12	(5-7)(5+7)
n	$n^2 - 49$	n-7	n+7	(n+7)(n-7)

Table 5

x	$x^2 + 5x + 6$	First Factor	Second Factor	pattern
1	12	3	4	(1+2)(1+3)
2	20	4	5	(2+2)(2+3)
3	30	5	6	(3+2)(3+3)
4	42	6	7	(4+2)(4+3)
5	56	7	8	(5+2)(5+3)
n	$n^2 + 5n + 6$	n+2	n+3	(n+2)(n+3)

Table 6

x	$x^2 - 2x - 3$	First Factor	Second Factor	pattern
1	-4	2	-2	(1+1)(1-3)
2	-3	3	-1	(2+1)(2-3)
3	0	4	0	(3+1)(3-3)
4	5	5	1	(4+1)(4-3)
5	12	6	2	(5+1)(5-3)
n	$n^2 - 2n - 3$	n+1	n-3	(n+1)(n-3)

Table 7

x	$2x^2 + 5x + 3$	First Factor	Second Factor	pattern
1	10	2	5	(1+1)(2x1+3)
2	21	3	7	(2+1)(2x2+3)
3	36	4	9	(3+1)(2x3+3)
4	55	5	11	(4+1)(2x4+3)
5	78	6	13	(5+1)(2x5+3)
n	$2n^2 + 5n + 3$	n+1	2n+3	(n+1)(2n+3)

Table 8

x	$6x^2 + x - 2$	First Factor	Second Factor	Pattern
-3	49	-7	-7	$(2x^3-1)(3x^3+2)$
-2	20	-5	-4	$(2x^2-1)(3x^2+2)$
-1	3	-3	-1	$(2x^1-1)(3x^1+2)$
0	-2	-1	2	$(2x^0-1)(3x^0+2)$
1	5	1	5	$(2x^1-1)(3x^1+2)$
2	24	3	8	$(2x^2-1)(3x^2+2)$
n	$6n^2 + n - 2$	$2n-1$	$3n+2$	$(2n-1)(3n+2)$

Table 9

x	$x^2 + x + 1$	first factor	second factor
1	3	1	3
2	7	1	7
3	13	1	13
4	21	1 or 3	21 or 7
5	31	1	31